

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
P.O. BOX 1450  
ALEXANDRIA, VA 22313-1450**

Appl No.: 10/743,178  
Applicant: Li-Ming Cheng et al.  
Filing Date: 12/23/2003  
Art Unit: 3634  
Examiner: Johnson, Blair  
Attorney Docket No.: 21406-001

**DECLARATION UNDER 37 CFR 1.132  
DECLARATION OF JERRY ZERG**

I, Jerry Zerg, declare the following:

**I. Background and Credential Information**

1. I am, and have been, the President and Owner of United Design Associates, Inc., since 1959. And, I am the Founder and Dean of Interior Decorators Institute, which was established in 1969. The mailing address for both is 529 North Highland Ave., Los Angeles, CA 90036.

2. United Design Associates (UDA) is an interior design, architectural, landscaping and general contracting firm for the public and the wholesale decorative trade.

2. Interior Decorators Institute (IDI) is an exclusive educational conservatory with curricula that certifies its students, upon graduation, as professional interior designers. IDI's instructors are all practicing and credentialed professional interior designers.

3. That I am a practicing Architect, Interior Designer, Safety Engineer, Building Contractor, Building Inspector and Construction Specifier. I hold the following credentials:

American Institute of Architects (AIA) #30008225

National Council of Architectural Registration Boards (NCARB) #44827

American Society of Safety Engineers (ASSE) #272519

American Society of Interior Designers (ASID) #19016

International Interior Design Association (IIDA) #707

Association of Construction Inspectors (CCI) #3722

Certified Construction Project Manager (CCPM) #3722

Construction Specifications Institute (CSI) #1493701

4. That in my capacity as the Dean of Interior Decorators Institute, I have taught courses in window treatments; I have also hired instructors and organized curricula for courses in the fabrication of window treatments.

5. That as a designer, specifier and seller of window blinds, I am familiar with the history and development of window blinds, and the development of cordless window blinds.

6. That I received The “Most Distinguished Designer of the Year” award for 1979, from American Society of Interior Designers in Los Angeles.

7. That I have had no previous business relationship with Mr. Li-Ming Cheng or his company, King Koon Industrial Corp. Based on my extensive knowledge and experience in window treatment, I was asked to evaluate and give professional opinion as a consultant on patent references cited by the Patent Examiner with respect to Mr. Cheng’s pending patent applications.

## **II. Publication and Patents Reviewed**

8. That I have reviewed U.S. Patent No. 2,594,637 issued to T. M. Gertzson (the Gertzson patent), and am intimately familiar with the Venetian blind control disclosed by this patent.

9. That I have reviewed U.S. Patent No. 5,482,100 issued to Otto Kuhar (the Kuhar patent), and am intimately familiar with the cordless blind system disclosed by this patent.

10. That I have also reviewed the following publications, all of which discusses that having less component parts is known to be advantageous:

a) U.S. Patent, Pat. No. 4,543,699, issued in 1985

- Relevant information can be found: Column 7, line 36
- This window blind patent implies that an element that can be fabricated from fewer and less expensive parts is an advantage

- b) U.S. Patent, Pat. No. 5,309,974, issued in 1994
  - Relevant information can be found: Column 3, line 16
  - This window blind patent teaches that a structure which is simple to manufacture has an advantage
- c) U.S. Patent, Pat. No. 6,059,004, issued in 2000
  - Relevant information can be found: Column 1, line 27
  - This window blind patent states that a window blind has an advantage because of fewer elements
- d) U.S. Patent, Pat. No. 6,050,321, issued in 2000
  - Relevant information can be found: Column 1, line 37
  - This window blind related patent has an objective of providing a system with fewer components
- e) U.S. Patent, Pat. No. 6,901,988, filed in 2001
  - Relevant information can be found: Column 18, line 16
  - This window blind patent states that the use of only one piece of an element (versus two pieces) would be less expensive to manufacture
- f) U.S. Patent, Pat. No. 6,968,884, filed in 2002
  - Relevant information can be found: Column 57, line 63
  - This window blind patent states the advantage of using a small number of modules
- g) U.S. Patent, Pat. No. 6,749,000, filed in 2002
  - Relevant information can be found: Column 1, line 45
  - This window blind patent teaches that it is a disadvantage to have extra parts in the system
- h) “An Examination of Prototyping and Design Outcome” by Maria C. Yang (see Appendix A)
  - This is a Research paper by a University of Southern California student studying the different elements in making a product better. It demonstrates how less parts/simpler design affect the outcome of a product. This paper was published/presented in 2004.

### **III. Facts and Opinions on the Window Blind Industry and Related Patents**

11. That based on my professional experience and knowledge in the window treatment development history, the primary characteristic that make a window blind advantageous and desirable to consumers is light control.

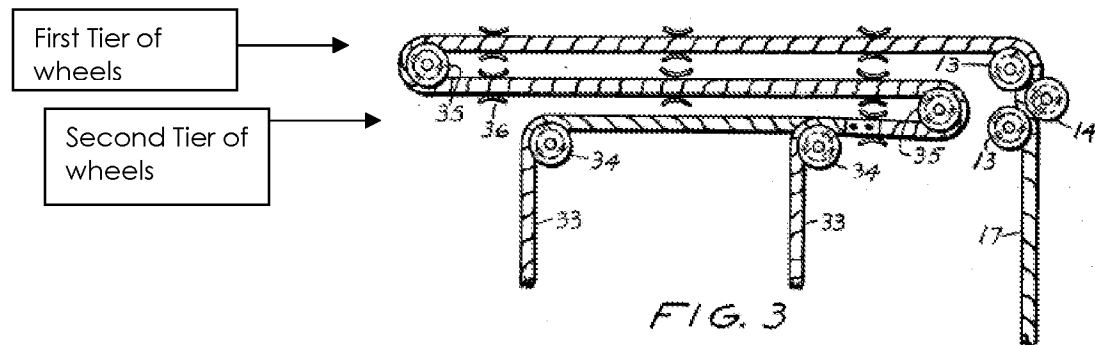
12. As for sellers/manufacturers of general consumer window blinds, the most advantageous and desirable characteristics for them in a window blind include:

- a) Lighter weight (simplifies assembly and installation, lowers freight and shipping costs)
- b) Lower manufacturing cost
- c) Less component parts (which lowers manufacturing cost, requires less maintenance and repairs)

Therefore, for sellers/manufacturers of general consumer window blinds, they typically design window blinds with the goal to achieve the above desired properties. For decades, the general direction of general consumer window blind design (including after Kuhar's 1996 teaching) has been designing window blinds that are less complicated, with less component parts.

13. There have been many different types of cordless and corded window blinds in the industry before the Kuhar patent was issued on January 9, 1996. And Kuhar's patent has a main objective of eliminating the disadvantages of the more complex and cumbersome cordless or corded window blind systems of the past, using a simple and easily adaptable mechanism to replace intricate inner components found in previous window blinds (including corded and uncorded window blinds). The Kuhar patent points out the importance of simplicity, and provides a viable solution in creating a desirable cordless window blind having less component parts.

14. The Gertzson patent is a good example of complex and cumbersome window blind with intricate inner components. Such intricate inner components are what the Kuhar patent was intended to replace. In the Gertzson patent, a Venetian blind has a complicated multi-tier pulley wheel set (please see next page for a drawing), guides (36), a manual pull cord, and a cord lock. The multi-tier pulley wheel set and the cord lock has opposite functions. The pulley wheels alleviate friction, while the cord lock creates friction to lock the cord. The pulley wheels (35) are sufficiently spaced apart and located in tiers, and guides (36) are needed to prevent the cord from twisting onto itself. This is a typical pulley system, designed to alleviate unwanted friction during operation, and permits a load to be lifted with less force.



15. That I, and possibly other window blind designers would immediately recognize that the spring motor in the Kuhar patent can effectively and desirably replace all of the components (i.e., multi-tier pulley wheel set, guides, manual pull cord, and cord lock) in the Gertzson patent, to result in a desirable cordless window blind with few component parts. I believe this was the intent and objective of the Kuhar patent.

16. That I, as well as other window blind designers, would not have wanted to merely replace the cord lock with Kuhar's spring motor, while retaining the multi-tier pulley wheel set and the guides. Multi-tier pulley wheels and guides are no longer necessary under the objective of Kuhar, and are rather undesirable to have. By replacing all intricate components with a simple spring-motor, the Kuhar patent provides most (if not all) of the desired properties – simplicity, lighter weight, lower manufacturing cost, and less component parts. Again, the spring motor in the Kuhar patent is sufficiently strong to lift the blinds without pulley wheels (35), and the extra component parts and manufacturing steps involved in retaining and assembling the cord, multiple pulley wheels, guides, would make it undesirably costly to manufacture. Retaining such intricate pulley system would create no competitive edge in the market place. Any reasonable window blind engineer would want to get rid of the intricate pulley system all together.

17. Another objective of the Kuhar patent is to increase friction on the cords to prevent self-bouncing of the bottom bar. The Kuhar design creates friction on the cord in at least three places:

- a) Slot 56 of figure 2
- b) Whole 49, 50 of figure 2
- c) The hole leading the cords out of the head rail and into the slats (see Figure 6)

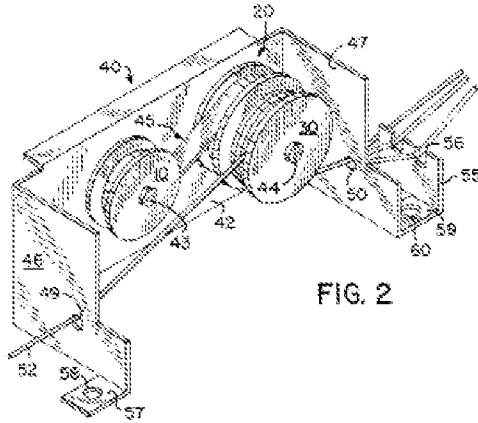


Fig. 2 of Kuhar's patent

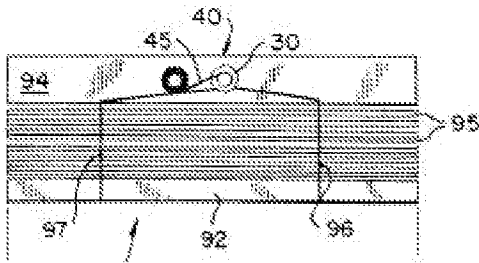


Fig. 6 of Kuhar's patent

The Kuhar design intentionally creates friction.

18. A pulley wheel has the established function of alleviating friction and allowing a load to be lifted with less force.

19. The Kuhar design specifically eliminates the use of pulley wheels. Using pulley wheels would be in direct conflict with Kuhar's objective.

#### **IV. Facts and Opinion of Window Blind covered by Mr. Li-Ming Cheng's Pending Patent Claims**

20. I examined a sample cordless blind provided to me by Mr. Cheng's attorney, Anthony King. According to Mr. King, this sample cordless blind is one of the many embodiments currently claimed in Mr. Cheng's various pending patent applications, including U.S. Patent Application No. 10/743,178. This sample blind will be hereafter referred to as **the Sample**.

21. The Sample has a head rail. In the head rail there is a spring motor with its own removable and adjustable housing and, a unique ROLLER/PULLEY system. Different from Gertzson's multi-tier pulley system and Kuhar's pulley system, the Sample intentionally allows the cords to wind together over and over around a set of rollers, which creates the necessary friction needed to stabilize and align the slats of the blind.

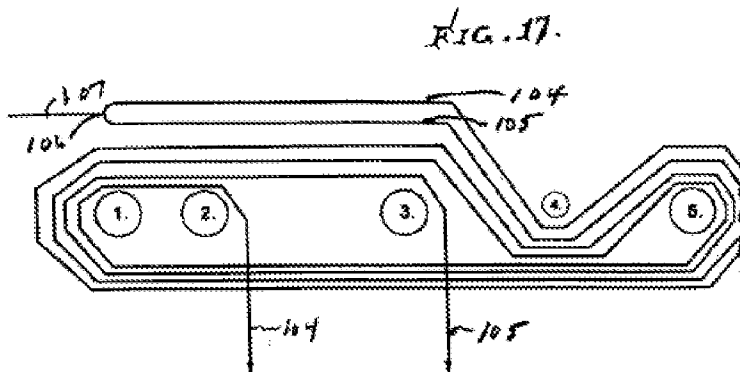


Fig. 17 of Mr. Cheng's 10/743,178

22. That the established function of Cheng's roller system is to create to create friction. This is accomplished by roller #4, which distorts the circular arrangement of the cords and by the touching proximity of the cords around the rollers.

23. In examining the Sample, I confirm the following unexpected results:

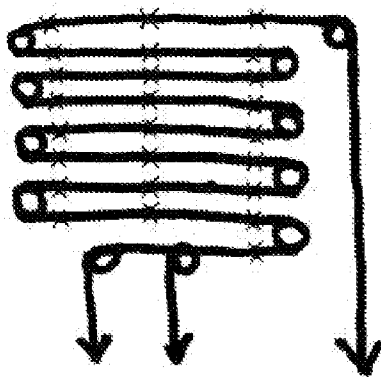
a.) More exact blind adjustment. While the spring motor itself may be sufficiently strong to counterbalance the weight of the blind's slats, cordless blinds need some type of structure to prevent blind slats from bouncing. In the Sample, friction created by winding the cord over and over the rollers allows more exact adjustment, which is very important to the appearance and function of a window blind. Tension created by roller #4 also helps in making this possible. For example, when a user wants to completely block out light, he/she will want to be able to easily pull down the blind to provide complete coverage without having to consider how far the blind may bounce back up or down. Also critical in interior design is the need to have adjacent blinds with the ability to easily align their height to each other, so that adjacent window blinds can look aligned. The multi-tier pulley wheel system in the Gertzson patent and the friction bracket in the Kuhar patent are not able to exercise the

precise level of control as in the Cheng ROLLER system. Furthermore, the device in the Kuhar system (slot 56, Fig. 2), which is used to guide and create cord friction, undesirably scrapes the cord, eventually wearing out the cord.

b.) Lighter weight and lower cost roller system unexpectedly allowed the Sample to use a smaller spring motor than that used in the Kuhar patent because the rollers are used to share the burden of storing cords with the cord spool in the spring motor. The smaller spring motor is lighter, less costly, making the overall window blind lighter with lowered freight and shipping cost.

c.) Prolong cord life – Using roller system to create friction instead of using a bracket prolongs cord life. In Kuhar, the bracket directly scrapes the cord to create friction.

d.) Smaller head rail - In the Sample, a large portion of the cord can be stored by repeatedly winding it around the same set of pulley wheels. And unlike the multi-tier pulley system of Gertzon, the Sample has a low-profile arrangement. As a result, the sample has a miniaturized head rail due to a low-profile pulley system and smaller spring-motor. The Kuhar patent needs a large head rail to house its rather large spring motor, because its spring motor has a large cord spool to store the cords. The multi-tier pulley system in Gertzon can not provide the same cord-storing function because to increase storage capacity, multiple tiers of pulleys are needed, making the head rail even bigger. To accommodate a longer cord, the multi-tier pulley system would need to add additional tiers like the illustration below:



This illustrates what a multi-tier pulley system may look like when it is expanded by adding additional tiers to accommodate a longer cord. Cords are nicely separated by guides so that the cords from each tier does not touch each other, and prevent adjacent cords from twist together. As in a typical pulley system, the purpose is to alleviate friction and permit lifting of load with less force.

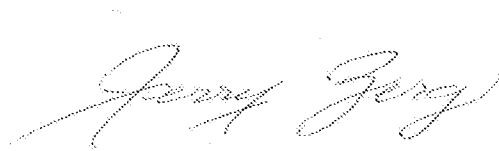


**V. Closing Remark**

24. Overall, the Sample arranges a set of rollers to perform functions that are different from what pulleys are typically known to function. Pulleys are known to alleviate friction, and typical blinds use pulley to alleviate friction. The roller set in the Sample creates friction, having a roller #4 to distort the cords also creates tension. These features gave the Sample a number of unexpected and desired properties, including more exact adjustment, lighter weight, lower manufacturing cost, less component parts, required less maintenance, and prolonged cord life.

The ingenuity, design and function, inherent in Cheng's blind, which are not available in either the Gertz patent or the Kuhar patent, are the qualities and attributes that window blind manufacturers, sellers and consumers are seeking.

25. I hereby declare that all statements made herein are true, and that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



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Jerry Zerg AIA Emeritus NCARB ASSE ASID IIDA CCI CCPM CSI  
Founder/Dean of Interior Decorators Institute  
President/Owner of United Design Associates, Inc.

Date July 14, 2007